

REMARKS

Claims 1-4 and 9-16 are pending. Claim 1 is hereby canceled without prejudice to the prosecution of subject matter canceled by amendment in other patent applications, and claims 2, 3 and 4 are currently amended. None of the amendments constitute new matter.

Claims 1-4 and 9-16 are rejected under 35 U.S.C. § 112 as allegedly failing to comply with the enablement requirement. Claims 1, 2 and 9-16 are rejected under 35 U.S.C. § 112 as being indefinite for failing to distinctly claim the subject matter of the present invention. Claims 1-4 are further rejected under 35 U.S.C. § 102(b) as being anticipated by the prior art. Finally, claims 9-16 are rejected under 35 U.S.C. § 103(a) as allegedly being obvious.

For reasons set forth herein, the rejections should be removed and the claims should be deemed allowable.

1. The Claims Are Enabled

The Examiner alleges that claims 1-4 and 9-16 contain subject matter not defined in the specification in such a way as to enable one skilled in the art to make or use the invention. In particular, the Examiner objects to the fact that the indicators “t” and “m” are not defined in the specification. However, to a person of ordinary skill in the art, these abbreviations are commonly known to represent “metric ton” and “meter,” respectively. This is especially true since the specification makes clear that pressing force is a measure of force per width, which translates to metric ton per meter. For example, paragraph 0032 of the specification states “the pressing force P (t/m) is a value obtained by dividing a whole pressing force (t) of a mold wall by the mold width (m), and thus is defined as the pressing force per unit mold width.” See also paragraph 0023, which refers to “millimeters” and “mm” in the same sentence, making clear that “m” refers to “meter.” Finally, please see the enclosed “Units of Measure” reference, prepared

by the Energy Information Administration of the U.S. Department of Energy, which denotes the abbreviation for “metric ton” as “t” and the abbreviation for “meter” as “m.” Accordingly, because the reference to “t” and “m” by Applicants refers to “metric ton” and “meter” respectively, thereby enabling one of ordinary skill in the art to practice the present invention, claims 1-4 and 9-16 are enabled.

2. The Claims Are Specific to the Present Invention

The Examiner asserts that claims 1, 2 and 9-12 are indefinite for their alleged failure to definitively claim the subject matter of the present invention. The Examiner advises Applicant to revise claim 1 to specify that the pressing force being applied to the casting is itself within the stated range. However, Applicant has hereby canceled claim 1 without prejudice and amended claim 2 to read “comprising applying a pressing force P of the at least one mold wall face against the casting wherein the pressing force is more than about 1.1 and less than about 1.6 t/m,” thereby resolving the Examiner’s concerns regarding distinct claiming of the present invention. As such, the claims as amended are specific to the present invention.

3. The Claims Are Novel

The Examiner alleges that claims 1-4 are rejected as being anticipated by either JP 2851252, JP 8-267,191, JP 8-215,797, JP 2-63,650 or JP 3-254,336. The Examiner bases this rejection on the failure of the Applicants to define units for the values denoted “t” and “m.” However, as explained in Section 1 of this Response, these indications are commonly known to those of ordinary skill in the art to denote “ton” and “meter,” respectively. As such, the claims are not anticipated by the prior art.

4. **The Claims Are Not Obvious**

Finally, the Examiner rejects claims 9-16 as being unpatentable over JP 2851252, JP 8-267,191, JP 8-215,797 or JP 3-254,336. These references collectively teach the application of a pressing force in the production of a stainless steel strip. In particular, JP 8-267,191 and JP 2851252 disclose the technique of controlling drum pressing force, the reduction of the amount of extruded unsolidified molten portion at the end of the solidification during formation of the core portion, reduction of unevenness of Ni segregation caused by molten steel flow, and reduction of unevenness of work hardening during rolling. The cited references further disclose the control of free chilled crystal, which is settled in the molten pool and dragged into the center portion of the cast strip, by reduction of uneven dragging and by reduction of Ni segregation.

The present invention describes a method for producing an austenitic stainless steel thin strip by a strip caster in which mold walls move synchronously with casting. The invention involves the application of a pressing force of at least one mold wall face that is equal in force to at least 1.0 and at most 2.5 metric tons per meter. The present invention specifically characterizes a desired relationship between drum radius R and pressing force P. Additionally, the present invention specifies that the height of a molten steel pool formed between at least two mold walls is within the range of 200-450 millimeters. Finally, the invention specifies that the ratio of an amount of Ni at Ni inverse segregation portions to an average amount of Ni in an entire sheet is within the range of 0.90-0.97.

The present invention is not obvious in light of the above-mentioned references. The present invention targets the reduction of small undulated surface defects (so-called “pepper and salt” defects) of not more than several millimeters in length and not more than 0.5 millimeters in width and generated in steel in which δ -ferrite remains in the austenite phase. The

inventions claimed in the cited references do not attempt to resolve the creation of these surface defects, defects which are inadvertently created using conventional methods of casting. The present invention addresses this particular problem by defining specific casting conditions, including the relationship between a pressing force P and a drum radius R . Furthermore, conventional pressing forces used in casting are significantly higher than that described in the present invention. The cited references do not teach or suggest the use of such a low pressing force in conjunction with the specific casting conditions described in order to remedy surface defects. For these reasons, the present invention is not obvious in view of the cited references.

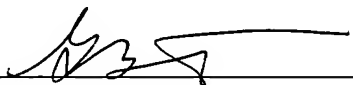
5. **Conclusion**

For the aforementioned reasons, Applicants believe the amended claims are in condition for allowance. As such, Applicants respectfully request prompt allowance of the pending claims.

Applicants submit herewith a check for \$110.00 representing the fee for a one-month extension of time as set forth in 37 C.F.R. § 1.17(a)(1) for a large entity in compliance with 37 C.F.R. § 1.27.

Applicants believe no other fees are due. The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication to Deposit Account No. 02-4377.

Respectfully submitted,
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Units of Measure

Note: For the following terms, the same form is used for singular and plural. Also, for various measures of thousand or million units of a commodity, EIA has adopted the policy to use "M" for *thousand* and "MM" for *million*.

A - ampere
at wt - atomic weight
bbl - barrel(s)
Bcf - billion cubic feet
bbl/d - barrels per day
bbl/sd - barrel(s) per stream day
BOE - barrels of oil equivalent (used internationally)
bp - boiling point
Btu - British thermal unit(s)
°C - degree Celsius
c, ct, ¢ - cent, cents
CDD - cooling degree-day
COE - crude oil equivalent (used internationally)
cwt - hundredweight
°F - degree Fahrenheit
cf or ft³ - cubic foot
fp - freezing point
ft - foot
gal - gallon(s)
gal/s - gallons per second
GWe - gigawatt electric
GWh - gigawatthour(s)
h - hour
HDD - heating degree-day
hp - horsepower
Hz - hertz
in² - square inch
J - joule(s)
kg - kilogram(s)
km - kilometer(s)
kV - kilovolt
kVA - kilovoltampere
kW - kilowatt
kWh - kilowatthour(s)
lt - long ton
m - meter(s)
Mbbl - thousand barrels
Mbbl/d - thousand barrels per day
Mcf - thousand cubic feet
MHz - megahertz
min - minute (time)
MMbbl/d - million barrels per day
MMBtu - million British thermal units
MMcf - million cubic feet

MMgal/d - million gallons per day
MMst - million short tons
mp - melting point
mpg - mile(s) per gallon
Mst - thousand short tons
mtu - metric ton uranium
mW - milliwatt
MW - megawatt
MWh - Megawatthour(s)
net wt - net weight
oz - ounce
psi - pounds per square inch
quad - quadrillion
Rvp - Reid vapor pressure
s - second (time)
sp.gr. - specific gravity
sq.ft. or ft² - square foot
st - short ton
STP - standard temperature and pressure
t - metric ton(s), also tonne(s)
TCE - tons of coal equivalent (used internationally)
Tcf - trillion cubic feet
TOE - tons of oil equivalent (used internationally)
ton - ton
V - volt
VA - voltampere
vol - volume
W - watt
Wh - watthour
yd. - yard
yr. - year

Click [here](#) to return to the beginning of the abbreviations chapter.